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Dr. Chang is working on special memory products in the East Fishkill laboratory. He joined IBM in Burlington in 1968. His education includes B.S. and M.S. degrees in electrical engineering from the National Taiwan University, Taipei, and the University of California at Berkeley in 1961 and 1963, and a Ph.D. in applied physics from Harvard University in 1969. Dr. Chang is a member of the Institute of Electrical and Electronics Engineers and Sigma Xi.

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Dr. Donath joined IBM in 1959 and for the past ten years has worked primarily on problems connected with design automation at the Thomas J. Watson Research Center. He received a B.S. degree in chemical engineering from the Carnegie Institute of Technology in Pittsburgh and a Ph.D. in chemistry from the University of California at Berkeley. He is a member of the Institute of Electrical and Electronics Engineers, Sigma Xi, and the Society for Industrial and Applied Mathematics.

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Dr. Gaver joined the Naval Postgraduate School in 1970, where he is a Professor of Operations Research and Statistics. During this time he has also been a consultant to the IBM Research Laboratory in San Jose. His technical interests are applied probability, data analysis as well as probability modeling and simulation of computer systems. He previously was employed by the U.S. Navy's Operations Evaluation Group from 1951 to 1953 and was a mathematician and later advisory mathematician at Westinghouse Research Laboratories in Pittsburgh, Pennsylvania, from 1956 to 1963. Subsequently he was a faculty member and finally Professor of Statistics at the Carnegie-Mellon University. In addition, Dr. Gaver has held visiting faculty appointments at Stanford University, Department of Statistics, and the University of California at Berkeley, Department of Operations Research. His educational background includes B.S., M.S. and Ph.D. degrees in mathematics from the Massachusetts Institute of Technology in 1950 and 1951 and Princeton University in 1956. Dr. Gaver is a member of the Operations Research Society of America and the Institute of Mathematical Statistics and a Fellow of the American Statistical Association and of the American Association for the Advancement of Science.

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Dr. Greenberg is currently working in the mechanics and hydrodynamics group of the Exploratory Technology Department. Since joining IBM in 1971 at San Jose, his technical interests have been directed toward mathematical modeling and computer simulation of mechanical systems. Dr. Greenberg was previously a mechanical engineer with the Bechtel Corporation in San Francisco, California. He received a B.S. in engineering mechanics in 1964, an M.S. in theoretical and applied mechanics in 1965, both from the University of Illinois, and a Ph.D. in applied mechanics in 1968 from the University of California at Berkeley.

Lawrence G. Heller

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Dr. Heller is an advisory engineer in the special exploratory memory group at the Thomas J. Watson Research Center, where his current interests are in MOS devices and circuits. He joined IBM in 1960 at the Endicott laboratory. Before transferring to the Research Center in 1973, he spent four years at the Burlington laboratory, where he was involved in various CCD and MOS bucket-brigade studies. His education includes B.S., M.S. and Ph.D. degrees in electrical engineering from the Newark College of Engineering in 1964 and Iowa State University, Ames, in 1967 and 1969. Dr. Heller is a member of Sigma Xi, Eta Kappa Nu, Tau Beta Pi, and the Institute of Electrical and Electronics Engineers.

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Dr. Hong is a Visiting Associate Professor of electrical engineering at the University of Illinois for the academic year 1974 to 1975. He joined IBM in 1969 in the reliability technology group working in the areas of system reliability, error-correcting codes, and test pattern generation. He later became engaged in research and development in efficient use of LSI, array logic and large function minimization on the staff of IBM Fellow, Dr. H. Fleisher. He received a B.Sc. in electronics engineering from Seoul National University in 1965, and an M.S. and a Ph.D. in electrical engineering from the University of Illinois in 1967 and 1969. Dr. Hong is a member and Distinguished Visitor of the Institute of Electrical and Electronics Engineers, the Mathematics Association of America, Sigma Xi, and the Korean Engineers and Scientists in America.

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Dr. Lewis is a Professor of Operations Research and Statistics at The Naval Postgraduate School in Monterey. He is also a consultant to the IBM Research Division, of which he was a member from 1955 to 1971, as well as to other organizations. He received an A.B. degree from Columbia College, Columbia University in 1954, a B.S. and an M.S. in electronic engineering from Columbia University Engineering School in 1955 and 1957, and a Ph.D. in statistics from the University of London in 1964. From 1969 to 1970 he was an NIH Special Fellow at Imperial College, University of London. Dr. Lewis is a member of the Royal Statistical Society, the American Statistical Association, the Institute of Mathematical Statistics, the Biometric Society, and is a Fellow of the Institute of Mathematical Statistics and the American Statistical Association. He is coauthor with D. R. Cox of the book: *The Statistical Analysis of Series of Events*, and recently edited a volume entitled: *Stochastic Point Processes: Statistical Analysis, Theory and Applications*.

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Dr. Ostapko is a member of the staff of IBM Fellow, Dr. H. Fleisher, and is investigating structures and design aids which provide more efficient use of large scale integration. Currently, his technical interests include array logic, design automation, and fault tolerant computing. He joined IBM in East Fishkill in 1968 and has since held several assignments in the development of computer hardware. He received a B.S. and a B.S.E.E. from Trinity College in 1963 and 1964, and an M.S. and a Ph.D. from Northwestern University in 1966 and 1968 in electrical engineering. During the 1973 to 1974 academic year, he was a Visiting Fellow in the Electrical Engineering Department at Johns Hopkins University. Dr. Ostapko is a member of Sigma Xi and the Institute of Electrical and Electronics Engineers.

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Dr. Senko is a member of the Mathematical Sciences Department at the Thomas J. Watson Research Center, where his current interests include theoretical physics and the scientific analysis of functions and performance in data base systems. He joined IBM in 1956 as a member of the Research Computing Center in Poughkeepsie. He has also been manager of the technical staff for the IBM Director of Research and manager of the Information Sciences Department at San Jose. In addition, he was chairman of the initial IBM Corporate Technical Board committee to set technical strategy for the information systems area. He also initiated the generalized information system project and was responsible for it during its original development. In 1964, he was appointed as a Brookings Institution Public Affairs Fellow and worked for the Assistant Secretary of Commerce for Science and Technology. He has been an ACM National Lecturer and is currently a member of the National Research Council, U.S. National Committee for CODATA. Dr. Senko is a member of the American Chemical Society, the American Crystallographic Association, the American Society for Information Science, the American Association for the Advancement of Science, the Association for Computing Machinery, the New York Academy of Sciences, and Sigma Xi.

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Mr. Shedler is currently a research staff member working in the area of modeling and analysis of data base systems. During the

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Dr. Talke joined IBM in 1969 at the Research Division and has been manager of the mechanics and hydrodynamics project in the applied science complex in San Jose since 1971. In this capacity he has been studying the mechanical aspects of magnetic recording technology. In 1971 he received an Outstanding Contribution Award for his investigations in friction, wear, and lubrication of disk files. In addition to his work with IBM, he has also taught graduate courses in friction, wear and lubrication at the University of Santa Clara, California. He attended the University of Stuttgart, Germany, where he received a Diplom-Ingenieur degree (MS) in applied mechanics in 1965, and the University of California at Berkeley, where he received a Ph.D. degree in mechanical engineering in 1969.

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